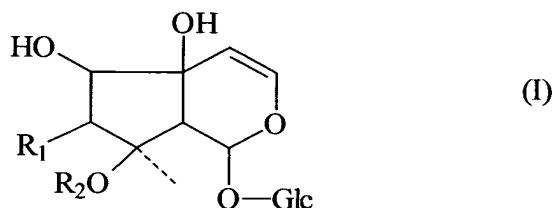


**WHAT IS CLAIMED IS:**

Sub H  
A1

1. Use of a compound represented by the following formula (I) as an agent for prevention and treatment of arthritis, osteoporosis and ruptured disc:

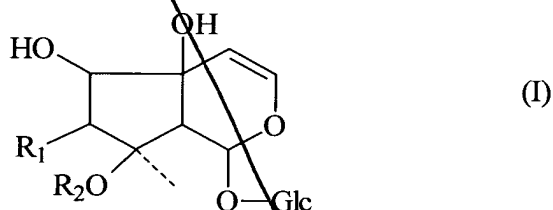


5 in which

R<sub>1</sub> represents hydrogen atom or alkyl group; and

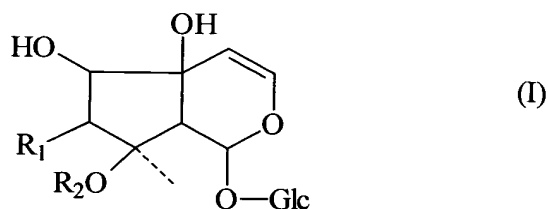
R<sub>2</sub> represents hydrogen atom or cinnamoyl group.

10 2. A pharmaceutical preparation containing as an effective component a compound represented by the following formula (I):



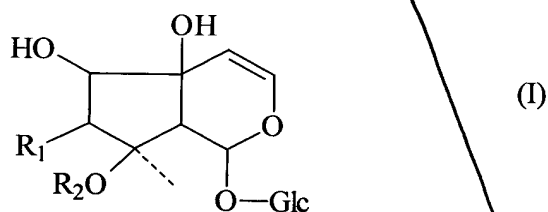
15 in which R<sub>1</sub> represents hydrogen atom or alkyl group and R<sub>2</sub> represents hydrogen atom or cinnamoyl group, in combination with a pharmaceutically acceptable auxiliary, diluent, isotonic agent, preservative, lubricant and solubilizing aid, which is formulated in the form of a pharmaceutically acceptable preparation and has a potent effect for osteoporosis, arthritis and ruptured disc.

3. A pharmaceutical preparation containing as an effective component a compound represented by the following formula (I):



in which  $R_1$  represents hydrogen atom or alkyl group and  $R_2$  represents hydrogen atom or cinnamoyl group, and one more materials selected from the group consisting of allendrate, tamoxifen, vitamin  $D_3$ , parathyroid hormone (PTH), sulfasalazine, thioredoxin reductase, alendronate, raloxifene, calcitonin, estradiol, genistein, 1,25-dihydroxyvitamin  $D_3$ , estrogen receptor modulator, biphosphonates, shinbarometin (novel material developed by the present inventors) and shinbarometin acetate (novel material developed by the present inventors), in combination with a pharmaceutically acceptable auxiliary, diluent, isotonic agent, preservative, lubricant and solubilizing aid, which is formulated in the form of a pharmaceutically acceptable preparation and has a potent effect for osteoporosis, arthritis and ruptured disc.

4. A process for preparing a compound of formula (I) wherein  $R_2$  is hydrogen atom, which has a more potent pharmacological activity, characterized in that a compound of formula (I) wherein  $R_2$  is cinnamoyl is hydrolyzed:



in which  $R_1$  represents hydrogen atom or alkyl group and  $R_2$  represents hydrogen atom or cinnamoyl group.

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